

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP 2004/008014

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ C08F253/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ C08F251/00-292/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 Japanese Utility Model Gazette 1922-1996, Japanese Publication of Unexamined Utility Model
 Applications 1971-2004, Japanese Registered Utility Model Gazette 1994-2004, Japanese Gazette
 Containing the Utility Model 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2001-288228 A (Techno Polymer KK) 2001.10.16, claims 1-3; paragraphs [0005] to [0011], [0018], [0023] and [0029] (Family:none)	1-2
X	JP 3-255113 A (Japan Atomic Energy Research Institute) 1991.11.14, claims 1-3; Example (Family:none)	1-2
X	GB 1505402 A (I.S.R. Holding, S.A.R.L.) 1978.03.30, claims 1-14; Page 3, lines 4-5; Examples (Family:none)	1-2

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

23.08.2004

Date of mailing of the international search report

07.9.2004

Name and mailing address of the ISA/JP

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-2

Remark on Protest

☐

The additional search fees were accompanied by the applicant's protest.

☒

No protest accompanied the payment of additional search fees.

(Box No. III: Observations where unity of invention is lacking)

This International Searching Authority found multiple inventions in this international application, as follows:

- Invention 1: A modified natural rubber characterized by graft-polymerizing natural rubber latex with a polar group-containing monomer at a grafting ratio of 0.01-5.0% by mass and then coagulating and drying. (Modified Natural Rubber A) [Claims 1-2]
- Invention 2: A method of producing Modified Natural Rubber A. [Claims 3-4]
- Invention 3: A rubber composition comprising Modified Natural Rubber A, and carbon black and/or silica. [Claims 5-8]
- Invention 4: A pneumatic tire characterized by applying a rubber composition including Modified Natural Rubber A to a tire constituting member. [Claim 9]
- Invention 5: A modified natural rubber characterized by adding a tin-containing monomer to natural rubber latex and graft-polymerizing them and then coagulating and drying. (Modified Natural Rubber A') [Claims 13-15]
- Invention 6: A modified natural rubber latex. (Modified Natural Rubber A' in a latex state) [Claims 10-12]
- Invention 7: A method of producing Modified Natural Rubber A' in a latex state. [Claims 16-18]
- Invention 8: A method of producing Modified Natural Rubber A'. [Claims 19-21]
- Invention 9: A rubber composition comprising Modified Natural Rubber A' and carbon black. [Claim 22]
- Invention 10: A modified natural rubber characterized by adding an alkoxysilyl group-containing monomer to natural rubber latex and graft-polymerizing them and then coagulating and drying. (Modified Natural Rubber A'') [Claims 25-26]
- Invention 11: A modified natural rubber latex. (Modified Natural Rubber A'' in a latex state) [Claims 23-24]
- Invention 12: A method of producing Modified Natural Rubber A'' in a latex state. [Claims 27-28]
- Invention 13: A method of producing Modified Natural Rubber A'' [Claims 29-30]
- Invention 14: A rubber composition comprising Modified Natural Rubber A'' and silica. [Claim 31]

It is considered that the above-mentioned 14 inventions have the common subject matter (Modified Natural Rubber A). The Modified Natural Rubber A, however, is well known to the public as taught by the three documents cited in this international search report. Therefore, this subject matter common to all the inventions is not a special technical feature that defines a contribution over the prior art as defined in PCT Rule 13.2. On the other hand, it does not seem that there is any other inventive link between these inventions.